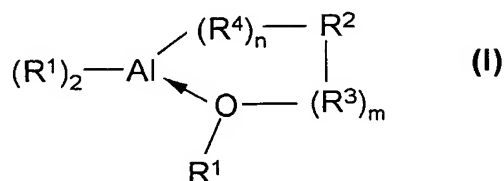


PATENT CLAIMS

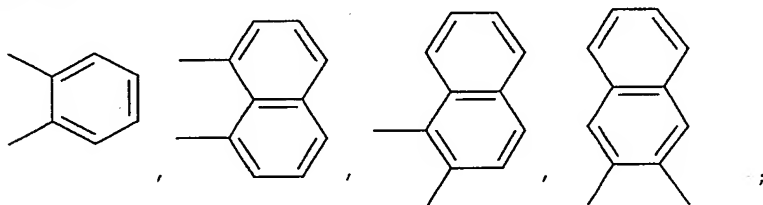
1. Compounds of the general formula (I)



in which

R^1 , independently of one another, denote branched or unbranched C_1 - C_7 -alkyl, -cycloalkyl, -alkenyl, -cycloalkenyl, -aryl or -alkynyl;

R^2 denotes unsubstituted, mono- or polyalkylated and/or mono- or polyfluorinated aromatic hydrocarbons from the group



R^3 , R^4 , independently of one another, denote CH_2 , CF_2 or $\text{C}(\text{R}^1)_2$; independently of one another,

m denotes 0, 1, 2

n denotes 0, 1, 2.

2. (8-Ethoxynaphth-1-yl)diethylaluminium,
 (2-methoxymethyl)phen-1-yl)diethylaluminium,
 (2-methoxymethylphen-1-yl)diisobutylaluminium,
 (2-methoxybenzyl)diisobutylaluminium
 [2-(methoxy)phen-1-yl]diisobutylaluminium
 [2-(butoxy)phen-1-yl]diisobutylaluminium
 as compounds according to Claim 1.

3. Use of the compounds of the general formula (I) according to Claim 1 or according to Claim 2 as components in coordination catalyst systems.
- 5 4. Use of the compounds of the general formula (I) according to Claim 1 or according to Claim 2 as components in Ziegler-Natta catalysts.
- 10 5. Coordination catalyst systems comprising compounds of the general formula (I) according to Claim 1 or according to Claim 2.
- 15 6. Coordination catalyst systems comprising compounds of the general formula (I) according to Claim 1 or according to Claim 2 in combination with transition-metal compounds from sub-group IV to VIII of the Periodic Table of the Elements.
- 20 7. Coordination catalyst systems comprising compounds of the general formula (I) according to Claim 1 or according to Claim 2 in combination with transition-metal compounds from the group TiCl_4 , VCl_4 .
- 25 8. Coordination catalyst systems comprising compounds of the general formula (I) according to Claim 1 or according to Claim 2, characterised in that they comprise transition-metal compounds from the group TiCl_4 , VCl_4 , which are supported on MgCl_2 .
- 30 9. Process for the preparation of polymers by polymerisation, characterised in that a coordination catalyst system according to one of Claims 5 to 8 is used.
- 35 10. Process for the preparation of polyethylene, characterised in that a coordination catalyst system according to one of Claims 5 to 8 is used.
11. Process for the preparation of high-molecular-weight polyethylene, characterised in that a coordination catalyst system according to one of Claims 5 to 8 is used.

- 5 12. Process for the preparation of compounds of the general formula (I) according to Claim 1 or according to Claim 2, characterised in that an alkoxyarylmatal compound is reacted with a dialkylaluminium chloride, where the alkoxyarylmatal compound to dialkylaluminium chloride molar ratio is 1:1.
- 10 13. Process according to Claim 12, characterised in that
a) an alkoxyarylmatal compound, suspended in a hydrocarbon, diethyl ether or tetrahydrofuran, is mixed with an equimolar amount of a dialkylaluminium chloride, dissolved in a suitable hydrocarbon, at a temperature of +20 to -78°C,
b) the mixture is stirred at a temperature of 20 to 80°C for 2 to 60 hours, the solvent is removed, and the desired reaction product is separated off by distillation or crystallisation.
- 15 14. Process according to Claims 12 to 13, characterised in that the alkoxyarylmatal compound employed is an alkoxyaryllithium or alkoxyaryl-Grignard compound.
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